Risk Assessment Summary
Ash Disposal Area
April 5, 1999

Introduction:

The two contaminants of primary concern (COPC) at the ash disposal pit are iron and arsenic. Both the residual ash in the pit as well as the soil under the pit were sampled and tested for these two contaminants. The residual ash and the underlying soil must be analyzed for the risk associated with them. Oral (ingestion) exposure and dermal exposure were analyzed for iron and arsenic, and the non-cancer and cancer risks summarized for each.

Data Evaluation: Residual Ash:

Based on sampling results, the ash in the disposal area is more contaminated with both iron and arsenic than the soil under the ash, and therefore the residual ash poses a higher risk than the underlying soil. Both the ash and the soil under the ash pit were considered for any possible risk associated with them. The findings show that the residual ash has no cancerous or non-cancerous harmful effects to any future resident, as demonstrated by application of the Streamlined Human Health Risk Assessment proposed by the Navy and accepted by EPA Region III.

Since the underlying soil has lower contaminant levels than the ash, and since the ash has no harmful effects, the underlying soil will not be considered as an individual component. However, a more careful examination of both carcinogenic and non-carcinogenic effects is warranted due to the contamination of both the ash and the underlying soil as well as the multiple-pathway exposure. In response to this concern, a comprehensive exposure risk will be calculated for both the ash and the soil. Full calculations and equation parameters are available in Appendix A for both contaminants in the ash and the soil below the pit. For this summary, however the most deleterious exposure will be considered; i.e. all exposure is to the more contaminated ash. The sample data for each of the four samples can be found in Appendix B.

Oral Exposure to Iron:

The non-cancerous oral risk associated with iron is shown by table 1, which calculates hazard quotients for a child resident, an adult resident, and the total for a combined child/adult 30 year resident. The values used in this calculation are shown in detail in Appendix A.

Table 1: Non-Cancer Hazard Quotient Calculations for Ingested Iron

	Dosage (mg/kg)	Reference Dose (mg/kg)	Hazard Quotient=D/RFD
HQ-adult	1.08 E-2	3.00 E-1	3.59 E-2
HQ-child	1.01 E-1	3.00 E-1	3.35 E-1
HQ-total for 30 years	1.12 E-1	3.00 E-1	3.71 E-1

Table 1 shows that not only are the individual child and adult populations below a hazard quotient of unity, but that the total dosage, accounting for a full 30-year exposure, is also below the danger level for deleterious effects.

Dermal Exposure to Iron:

The non-cancerous dermal risk associated with iron is shown by table 2. This table calculates hazard quotients for a child resident, an adult resident, and the total for a 30-year resident. The values used in this calculation are shown in detail in Appendix A.

Table 2: Non-Cancer Hazard Quotient Calculations for Dermal Iron

	Dosage (mg/kg)	Reference Dose (mg/kg)	Hazard Quotient=D/RFD
HQ-adult	9.70 E-5	3.00 E-1	3.23 E-4
HQ-child	1.81 E-3	3.00 E-1	6.03 E-3
HQ-total for 30 years	1.91 E-3	3.00 E-1	6.35 E-3

Table 2 shows that not only are the individual child and adult populations below a hazard quotient of unity, but that the total dosage, accounting for a full 30-year exposure, is also below the danger level for deleterious effects.

Total Hazard Risk Due to Iron:

The total risk, combining both possible exposure pathways, also falls beneath the threshold value of 1. These values are shown in Table 3.

Table 3: Total Hazard Quotient Calculations for Iron Contamination

	HQ: Ingestion Exposure	HQ: Dermal Exposure	Total HQ
HQ-adult	3.59 E-2	3.23 E-4	3.62 E-2
HQ-child	3.35 E-1	6.03 E-3	3.41 E-1
HQ-total for 30 years	3.71 E-1	6.37 E-3	3.77 E-1

Cancer Risk for Iron Exposure:

At the current time, EPA does not consider iron a carcinogen, therefore it has no cancer risk associated with it.

Oral Exposure to Arsenic:

The non-cancerous oral risk associated with arsenic is shown by table 4, which calculates hazard quotients for a child resident, an adult resident, and the total for a 30 year resident. The values used in this calculation are shown in detail in Appendix A.

Table 4: Non-Cancer Hazard Quotient Calculations for Ingested Arsenic

	Dosage (mg/kg)	Reference Dose (mg/kg)	Hazard Quotient=D/RFD
HQ-adult	1.10 E-5	3.00 E-4	3.65 E-2
HQ-child	1.02 E-4	3.00 E-4	3.41 E-1
HQ-total for 30 years	1.13 E-4	3.00 E-4	3.78 E-1

Table 4 shows that not only are the individual child and adult populations below a hazard quotient of unity, but that the total dosage, accounting for a full 30-year exposure, is also below the danger level for deleterious effects.

Dermal Exposure to Arsenic:

The non-cancerous dermal risk associated with arsenic is shown by table 5. This table calculates hazard quotients for a child resident, an adult resident, and the total for a 30-year resident. The values used in this calculation are shown in detail in Appendix A.

Table 5: Non-Cancer Hazard Quotient Calculations for Dermal Arsenic

	Dosage (mg/kg)	Reference Dose (mg/kg)	Hazard Quotient=D/RFD
HQ-adult	3.16 E-7	6.00 E-5	5.26 E-3
HQ-child	5.89 E-6	6.00 E-5	9.82 E-2
HQ-total for 30 years	6.21 E-6	6.00 E-5	1.03 E-1

Table 5 shows that not only are the individual child and adult populations below a hazard quotient of unity, but that the total dosage, accounting for a full 30-year exposure, is also below the danger level for deleterious effects.

Total Hazard Risk Due to Arsenic:

The total risk, combining both possible exposure pathways, also falls beneath the threshold value of 1. These values are shown in Table 6.

Table 6: Total Hazard Quotient Calculations for Arsenic Contamination

	HQ: Ingestion Exposure	HQ: Dermal Exposure	Total HQ
HQ-adult	3.65 E-2	5.26 E-3	4.18 E-2
HQ-child	3.41 E-1	9.82 E-2	4.39 E-1
HQ-total for 30 years	3.78 E-1	1.03 E-1	4.81 E-1

Cancer Risk for Arsenic Exposure:

The doses associated with cancer-causing effects of arsenic are less than the doses considered above for short-term effects. This is due to the averaging time. Non-cancerous effects only affect residents for the time that they are exposed to the chemical; i.e. for the time they would live on-site. For cancerous effects, the total exposure to the carcinogen is averaged over an entire lifetime. The effect of this averaging is to reduce the daily dose when examining deleterious effects.

Cancer Risk for Ingested Arsenic:

The cancer risk for ingested arsenic is shown in table 7. The table calculates total cancer risk for a child resident, an adult resident and the total for an entire lifetime (70 years) after residing on the site for 30 years. The values used in this calculation are shown in detail in Appendix A.

Table 7: Cancer Risk Calculations for Ingested Arsenic in Ash

	Dosage (mg/kg)	Cancer Slope Factor (kg/mg)	Cancer Risk =1-exp(-CSF*D)
CR-adult	3.76 E-6	1.50	5.64 E-6
CR-child	8.77 E-6	1.50	1.32 E-5
CR-total for lifetime	1.25 E-5	1.50	1.88 E-5

The cancer risk for adults, children, and the total lifetime risk for a 30-year exposure is within the required EPA guidelines of 1.00 E-4 to 1.00 E-6.

Cancer Risk for Dermal Arsenic:

The cancer risk for dermally absorbed arsenic is shown in table 8. The table calculates total cancer risk for a child resident, an adult resident and the total for an entire lifetime after residing on the site for 30 years. The values used in this calculation are shown in detail in Appendix A.

Table 8: Cancer Risk Calculations for Dermal Arsenic in Ash

	Dosage (mg/kg)	Cancer Slope Factor (kg/mg)	Cancer Risk =1-exp(-CSF*D)
CR-adult	1.08 E-7	7.50	8.12 E-7
CR-child	5.05 E-7	7.50	3.79 E-6
CR-total for 30 years	6.13 E-7	7.50	4.60 E-6

The cancer risk for adults, children, and the total lifetime risk for a 30-year exposure is within or safely below the required EPA guidelines of 1.00 E-4 to 1.00 E-6.

Total Cancer Risk Due to Arsenic:

The total lifetime cancer risk, combining both possible exposure pathways, also falls within the permissible range. These values are shown in Table 9.

Table 9: Total Cancer Risk Calculations for Arsenic Contamination

	CR: Ingestion Exposure	CR: Dermal Exposure	Total CR
CR-adult	5.64 E-6	8.12 E-7	6.45 E-6
CR-child	1.32 E-5	3.79 E-6	1.70 E-5
CR-total for 30 years	1.88 E-5	4.60 E-6	2.34 E-5

SUMMARY

Total Non-Cancer Risk for Ash Disposal Pit:

The total Hazard Quotient is figured out from the collected data from Tables 1,2,4, and 5. Hazard Quotients from the ash are combined for both contaminants and both methods of exposure. This data is summarized in Table 10. As shown in the table below, the total Hazard Quotient is below unity for all contaminants and all exposure pathways. In addition, arsenic and iron target different organs in the human body, lessening any potential effects even further.

Table 10: Total Hazard Quotient Risks for Ash Disposal Pit

	HQ-adult	HQ-child	HQ-total for 30 years
Ingested Iron in Ash	3.59 E-2	3.35 E-1	3.71 E-1
Dermal Iron in Ash	3.23 E-4	6.03 E-3	6.35 E-3
Ingested Arsenic in Ash	3.65 E-2	3.41 E-1	3.78 E-1
Dermal Arsenic in Ash	5.26 E-3	9.82 E-2	1.03 E-1
Total HQ	**7.80 E-2**	**7.80 E-1**	**8.58 E-1**

Total Cancer Risk for Ash Disposal Pit:

Since iron is not identified as a carcinogen and has no cancer risk associated with it, the total cancer risk for the ash disposal pit is the same as that shown in table 9. These values fall well within the accepted range for risk.

Conclusion:

The hazard quotient for iron and arsenic, as evaluated for both dermal and oral exposure, remain below unity, and therefore there is no elevated, non-cancer threat to human health from these contaminants at current levels. In addition, not only is there no cancer risk associated with iron, but the cancer risk associated with arsenic is shown to be within EPA guidelines for acceptable risk to the potential future residents. Both iron and arsenic show no deleterious effects to future residents on the ash disposal site, therefore any cleanup of the ash would be driven by MDE regulatory levels for total petroleum hydrocarbons in soil, rather than by human health risk considerations.

APPENDIX A:
CALCULATIONS FOR RISK ASSESSMENT
March 15, 1999

In the Streamlined Human Health Risk Assessment proposed by the Navy and accepted by EPA Region III, the following equations and parameters were set for the Soil Exposure-Oral Ingestion Equation and the Soil Exposure-Dermal Equation:

Soil Exposure – Oral/Ingestion Equations

$D = (C \times IR \times EF \times ED \times Fi \times ABS \times CF)/(BW \times AT)$

Parameter:	Accepted Values:
D = Ingested Dose (mg/kg/day)	
C = Concentration in Soil or Ash (mg/kg)	Ash: Iron = 7870 Arsenic = 8 Soil Iron = 6350 Arsenic = 1.8

The concentration values were taken from the highest value found from the samples analyzed at each location. For the ash, sample #360 had a TAL Iron level of 7870 mg/kg and a TAL arsenic level of 8 mg/kg. For the soil under the pit, sample #363 had a TAL Iron level of 6350 mg/kg and sample #362 had a TAL arsenic level of 1.8 mg/kg. (See figures A and B for sample locations.)

IR = Soil Ingestion Rate (mg/day)	= 100 for adults; 200 for children
EF = Exposure Frequency (days/year)	= 350
ED = Exposure Duration (years)	= 24 for adults, 6 for children, and 30 total combined adult/child
Fi = Fraction Ingested From Source	= 1
ABS = Absorption Fraction	= 1
CF = Conversion Factor (kg/mg)	= 1.00 E-6
BW = Body Weight (kg)	= 70 for adults; 15 for children
AT = Averaging Time (days)	= Non-Cancerous AT is 8760 days (24 years) for adults, and 2190 days (6 years) for children = Cancerous AT is 25550 days (70 years)

Soil Exposure – Dermal Equations

D = (C x SA x ABS x AF x EF x ED x CF)/(BW x AT)

Parameter:	Accepted Values:
D = Ingested Dose (mg/kg/day)	
C = Concentration in Soil or Ash (mg/kg)	Ash: Iron = 7870 Arsenic = 8 Soil Iron = 6350 Arsenic = 1.8

The concentration values were taken from the highest value found from the samples analyzed at each location. For the ash, sample #360 had a TAL Iron level of 7870 mg/kg and a TAL arsenic level of 8 mg/kg. For the soil under the pit, sample #363 had a TAL Iron level of 6350 mg/kg and sample #362 had a TAL arsenic level of 1.8 mg/kg. (See Figures A and B for sample locations.)

SA = Skin Area Available for Contact (cm2/day)	= 3000 for adults; 1800 for children
ABS = Absorption Fraction	= 0.01
AF = Soil-to-Skin Adherence Factor (mg/cm2)	= 0.03 for adults; 0.2 for children
EF = Exposure Frequency (days/yr)	= 350
ED = Exposure Duration (yrs)	= 24 for adults; 6 for children; 30 for combined adult/child
CF = Conversion Factor (kg/mg)	= 1.00 E-6
BW = Body Weight (kg)	= 70 for adults; 15 for children
AT = Averaging Time (days)	– Non-Cancer-Risk AT is 8760 days (24 years) for adults, and 2190 days (6 years) for children = Cancer-Risk AT is 25550 days (70 years)

Hazard Quotient Calculation

HQ = D / RfD

HQ = Hazard Quotient

D – Ingested Dose
Calculated from Equations above (non-cancer-risk averaging times are used)

RfD = Reference Dose
From EPA's Integrated Risk Information System (IRIS)
= 3.00 E-1 for oral/dermal exposure to iron
= 3.00 E-4 for oral exposure to arsenic
= 6.00 E-5 for dermal exposure to arsenic

Hazard Quotient values are required to be less than one in order to substantially reduce the danger of acute effects due to the level of contamination in the area of potential concern.

Cancer Risk Calculation

(CR) = 1 – exp(-CSF x D)

CR = cancer risk

CSF = cancer slope factor
From EPA's Integrated Risk Information System (IRIS)
= 1.50 for oral exposure to arsenic
= 7.50 for dermal exposure to arsenic

D = ingested or dermal dose.
From the above calculations (cancer-risk averaging times are used)

Cancer Risk values must fall within an accepted range of risk. This range is 1.0 E-6 to 1.0 E-4

CALCULATIONS FOR ASH

Table A-1: Ingested Dose Calculations for Iron in Ash

	C	IR	EF	ED	Fi	ABS	CF	BW	AT	D=(C*IR*EF*ED*FI*ABS*CF)/(BW*AT)
D-adult	7870	100	350	24	1	1	.000001	70	8760	1.08 E-2
D-child	7870	200	350	6	1	1	.000001	15	2190	1.01 E-1

Table A-2: Hazard Quotient Calculations for Ingested Iron in Ash

	D	RFD	HQ=D/RFD
HQ-adult	1.08 E-2	3.00 E-1	3.59 E-2
HQ-child	1.01 E-1	3.00 E-1	3.35 E-1
HQ-total for 30 years	1.12 E-1	3.00 E-1	3.71 E-1

Table A-3: Dermal Dose Calculations for Iron in Ash

	C	SA	ABS	AF	EF	ED	CF	BW	AT	D=(C*SA*ABS*AF*EF*ED*CF)/(BW*AT)
D-adult	7870	3000	0.01	.03	350	24	.000001	70	8760	9.70 E-5
D-child	7870	1800	0.01	.2	350	6	.000001	15	2190	1.81 E-3

Table A-4: Hazard Quotient Calculations for Dermal Iron in Ash

	D	RFD	HQ=D/RFD
HQ-adult	9.70 E-5	3.00 E-1	3.23 E-4
HQ-child	1.81 E-3	3.00 E-1	6.03 E-3
HQ-total for 30 years	1.91 E-3	3.00 E-1	5.37 E-3

Table A-5: Ingested Dose Calculations for Arsenic in Ash

	C	IR	EF	ED	Fi	ABS	CF	BW	AT	D=(C*IR*EF*ED*FI*ABS*CF)/(BW*AT)
D-adult	8	100	350	24	1	1	.000001	70	8760	1.10 E-5
D-child	8	200	350	6	1	1	.000001	15	2190	1.02 E-4

Table A-6: Hazard Quotient Calculations for Ingested Arsenic in Ash

	D	RFD	HQ=D/RFD
HQ-adult	1.10 E-5	3.00 E-4	3.65 E-2
HQ-child	1.02 E-4	3.00 E-4	3.41 E-1
HQ-total for 30 years	1.13 E-4	3.00 E-4	3.78 E-1

Table A-7: Cancer-risk Dose Calculations for Ingested Arsenic in Ash

	C	IR	EF	ED	Fi	ABS	CF	BW	AT	D=(C*IR*EF*ED*FI*ABS*CF)/(BW*AT)
D-adult	7870	100	350	24	1	1	.000001	70	25550	3.76 E-6
D-child	7870	200	350	6	1	1	.000001	15	25550	8.77 E-6

Table A-8: Cancer Risk Calculations for Ingested Arsenic in Ash

	D	CSF	CR=1-exp(-CSF*D)
CR-adult	3.76 E-6	1.5	5.64 E-6
CR-child	8.77 E-6	1.5	1.32 E-5
CR-total for 30 years	1.25 E-5	1.5	1.88 E-5

Table A-9: Dermal Dose Calculations for Arsenic in Ash

	C	SA	ABS	AF	EF	ED	CF	BW	AT	D=(C*SA*ABS*AF*EF*ED*CF)/(BW*AT)
D-adult	8	3000	0.032	.03	350	24	.000001	70	8760	3.16 E-7
D-child	8	1800	0.032	.2	350	6	.000001	15	2190	5.89 E-6

Table A-10: Hazard Quotient Calculations for Dermal Arsenic

	D	RFD	HQ=D/RFD
HQ-adult	3.16 E-7	.00006	5.26 E-3
HQ-child	5.89 E-6	.00006	9.82 E-2
HQ-total for 30 years	6.21 E-6	.00006	1.03 E-1

Table A-11: Cancer-risk Dose Calculations for Dermal Arsenic in Ash

	C	SA	ABS	AF	EF	ED	CF	BW	AT	D=(C*SA*ABS*AF*EF*ED*CF)/(BW*AT)
D-adult	8	3000	0.032	.03	350	24	.000001	70	25550	1.08 E-7
D-child	8	1800	0.032	.2	350	6	.000001	15	25550	5.05 E-7

Table A-12: Cancer Risk Calculations for Dermal Arsenic in Ash

	D	CSF	CR=1-exp(-CSF*D)
CR-adult	1.08 E-7	7.5	8.12 E-7
CR-child	5.05 E-7	7.5	3.79 E-6
CR-total for 30 years	6.13 E-7	7.5	4.60 E-6

SOIL UNDER ASH DISPOSAL PIT

Table A-13: Ingested Dose Calculations for Iron in Soil Under Ash

	C	IR	EF	ED	Fi	ABS	CF	BW	AT	D=(C*IR*EF*ED*FI*ABS*CF)/(BW*AT)
D-adult	6350	100	350	24	1	1	.000001	70	8760	8.70 E-3
D-child	6350	200	350	6	1	1	.000001	15	2190	8.12 E-2

Table A-14: Hazard Quotient Calculations for Ingested Iron in Soil Under Ash

	D	RFD	HQ=D/RFD
HQ-adult	8.70 E-3	3.00 E-1	2.90 E-2
HQ-child	8.12 E-2	3.00 E-1	2.71 E-1
HQ-total for 30 years	8.99 E-2	3.00 E-1	3.00 E-1

Table A-15: Dermal Dose Calculations for Iron in Soil Under Ash

	C	SA	ABS	AF	EF	ED	CF	BW	AT	D=(C*SA*ABS*AF*EF*ED*CF)/(BW*AT)
D-adult	6350	3000	0.01	.03	350	24	.000001	70	8760	7.83 E-5
D-child	6350	1800	0.01	.2	350	6	.000001	15	2190	1.46 E-3

Table A-16: Hazard Quotient Calculations for Dermal Iron in Soil Under Ash

	D	RFD	HQ=D/RFD
HQ-adult	7.83 E-5	3.00 E-1	2.61 E-4
HQ-child	1.46 E-3	3.00 E-1	4.87 E-3
HQ-total for 30 years	1.54 E-3	3.00 E-1	5.13 E-3

Table A-17: Ingested Dose Calculations for Arsenic in Soil Under Ash

	C	IR	EF	ED	Fi	ABS	CF	BW	AT	D=(C*IR*EF*ED*FI*ABS*CF)/(BW*AT)
D-adult	1.8	100	350	24	1	1	.000001	70	8760	2.47 E-6
D-child	1.8	200	350	6	1	1	.000001	15	2190	2.30 E-5

Table A-18: Hazard Quotient Calculations for Ingested Arsenic in Soil Under Ash

	D	RFD	HQ=D/RFD
HQ-adult	2.47 E-6	3.00 E-4	8.22 E-3
HQ-child	2.30 E-5	3.00 E-4	7.67 E-2
HQ-total for 30 years	2.55 E-5	3.00 E-4	8.49 E-2

Table A-19: Cancer-risk Dose Calculations for Ingested Arsenic in Soil Under Ash

	C	IR	EF	ED	Fi	ABS	CF	BW	AT	D=(C*IR*EF*ED*FI*ABS*CF)/(BW*AT)
D-adult	1.8	100	350	24	1	1	.000001	70	25550	8.45 E-7
D-child	1.8	200	350	6	1	1	.000001	15	25550	1.97 E-6

Table A-20: Cancer Risk Calculations for Ingested Arsenic in Soil Under Ash

	D	CSF	CR=1-exp(-CSF*D)
CR-adult	8.45 E-7	1.5	1.27 E-6
CR-child	1.97 E-6	1.5	2.96 E-6
CR-total for 30 years	2.82 E-6	1.5	4.23 E-6

Table A-21: Dermal Dose Calculations for Arsenic in Soil Under Ash

	C	SA	ABS	AF	EF	ED	CF	BW	AT	D=(C*SA*ABS*AF*EF*ED*CF)/(BW*AT)
D-adult	1.8	3000	0.032	.03	350	24	.000001	70	8760	7.10 E-8
D-child	1.8	1800	0.032	.2	350	6	.000001	15	2190	1.33 E-6

Table A-22: Hazard Quotient Calculations for Dermal Arsenic in Soil Under Ash

	D	RFD	HQ=D/RFD
HQ-adult	7.10 E-8	.00006	1.18 E-3
HQ-child	1.33 E-6	.00006	2.21 E-2
HQ-total for 30 years	1.40 E-6	.00006	2.33 E-2

Table A-23: Cancer-risk Dose Calculations for Dermal Arsenic in Soil Under Ash

	C	SA	ABS	AF	EF	ED	CF	BW	AT	D=(C*SA*ABS*AF*EF*ED*CF)/(BW*AT)
D-adult	1.8	3000	0.032	.03	350	24	.000001	70	25550	2.43 E-8
D-child	1.8	1800	0.032	.2	350	6	.000001	15	25550	1.14 E-7

Table A-24: Cancer Risk Calculations for Dermal Arsenic in Soil Under Ash

	D	CSF	CR=1-exp(-CSF*D)
CR-adult	2.43 E-8	7.5	1.83 E-7
CR-child	1.14 E-7	7.5	1.52 E-7
CR-total for 30 years	1.38 E-7	7.5	3.35 E-7

APPENDIX B

SOIL SAMPLE LABORATORY DATA SHEETS

ASH Composite
By Mike Lacy

Bainbridge Ash

Sample Date - 10 June 1998 Sample No. Ash 360

TPH	(mg/kg)
GRO	< 0.044
DRO	44
Motor Oil	75
TCL VOCs	(ug/kg)
Acetone	< 10
Benzene	< 5
Bromoform	< 5
Bromodichloromethane	< 5
Bromomethane	< 10
2-Butanone	< 10
Carbon Disulfide	< 5
Carbon Tetrachloride	< 5
Chlorobenzene	< 5
Chloroethane	< 10
Chloromethane	< 10
Chloroform	< 5
1,1-Dichloroethane	< 5
1,2-Dichloroethane	< 5
1,1-Dichloroethene	< 5
1,2-Dichloroethene	< 5
1,2-Dichloropropane	< 5
cis-1,3-Dichloropropene	< 5
trans-1,3-Dichloropropene	< 5
Ethylbenzene	< 5
2-Hexanone	< 10
Methylene chloride	18 B
4-Methyl-2-pentanone	< 10
Styrene	< 5
1,1,2,2-Tetrachloroethane	< 5
Tetrachloroethene	< 5
Toluene	< 5
1,1,1-Trichloroethane	< 5
1,1,2-Trichloroethane	< 5
Trichloroethene	< 5
Vinyl chloride	< 10
Xylenes (Total)	< 5
TCL SVOCs	(ug/kg)
Acenapthene	< 380
Acenaphthylene	< 380
Anthracene	< 380
Benzo(a)anthracene	30 J
Benzo(a)pyrene	29 J
Benzo(b)fluoranthene	26 J
Benzo(g,h,i)perylene	< 380
Benzo(k)fluorethene	35 J
Bis(2-chloroethoxy)methane	< 380
Bis(2-chloroethyl)ether	< 380
Bis(2-chloroisopropyl)ether	< 380
Bis(2-ethylhexyl)phthalate	< 380

TCL SVOCs	(ug/kg)
4-Bromophenylphenylether	< 380
Butylbenzylphthalate	< 380
4-Chloro-3-methylphenol	< 380
4-Chloroaniline	< 380
2-Chloronapthalene	< 380
2-Chlorophenol	< 380
4-Chlorophenylphenylether	< 380
Chrysene	47 J
Di-n-butylphthalate	< 380
Di-n-octylphthalate	< 380
Dibenz(a,h)anthracene	< 380
Dibenzofuran	< 380
1,2-Dichlorobenzene	< 380
1,3-Dichlorbenzene	< 380
1,4-Dichlorobenzene	< 380
3,3'-Dichlorobenzidine	< 380
2,4-Dichlorophenol	< 380
Diethylphthalate	< 380
Dimethylphthalate	< 380
2,4-Dimethylphenol	< 380
4,6-Dinitro-2-methylphenol	< 960
2,4-Dinitrophenol	< 960
2,4-Dinitrotoluene	< 380
2,6-Dinitrotoluene	< 380
Fluoranthene	54 J
Fluorene	< 380
Hexachlorobenzene	< 380
Hexachlorobutadiene	< 380
Hexachlorocyclopentadiene	< 380
Hexachloroethane	< 380
Indeno(1,2,3-cd)pyrene	< 380
Isophorone	< 380
2-Methylnaphthalene	< 380
2-Methylphenol	< 380
4-Methylphenol	< 380
N-Nitroso-di-n-propylamine	< 380
N-Nitrosodiphenylamine	< 380
Naphthalene	< 380
2-Nitroaniline	< 960
3-Nitroaniline	< 960
4-Nitroaniline	< 960
Nitrobenzene	< 380
2-Nitrophenol	< 380
4-Nitrophenol	< 960
Pentachlorophenol	< 960
Phenanthrene	46 J
Phenol	< 380
Pyrene	50 J
1,2,4-Trichlorobenzene	< 380
2,4,5-Trichlorphenol	< 960
2,4,6-Trichlorphenol	< 380

TCL Pesticides/PCBs	(ug/kg)
Aldrin	< 1.9
Dieldrin	< 3.8
α/γ-Chlordane	< 1.9
4,4'-DDT	6.1
4,4'-DDD	< 3.8
4,4'-DDE	10
Endosulfan I	< 1.9
Endosulfan II	< 3.8
Endosulfan sulfate	< 3.8
Endrin	< 3.8
Endrin aldehyde	< 3.8
Heptachlor	< 1.9
Heptachlor epoxide	< 1.9
Methoxychlor	< 19
Endrin ketone	< 3.8
alpha-BHC	< 1.9
beta-BHC	< 1.9
gamma-BHC (Lindane)	< 1.9
delta-BHC	< 1.9
Toxaphene	< 190
Arochlor 1016	< 38
Arochlor 1221	< 76
Arochlor 1232	< 38
Arochlor 1242	< 38
Arochlor 1248	< 38
Arochlor 1254	< 38
Arochlor 1260	< 38
TAL Metals	(mg/kg)
Aluminum	4300
Antimony	< 3.6
[illegible]	7.3
Barium	59.8
Beryllium	0.35
Cadmium	< 0.40
Calcium	1830
Chromium	5.8
Cobalt	2.8
Copper	18.5
Iron	7870
Lead	14.9
Magnesium	237
Manganese	41.1
Mercury	0.05
Nickel	7.9
Potassium	325
Selenium	< 3.8
Silver	< 0.76
Sodium	107
Thallium	< 4.8
Vanadium	15.6
Zinc	46.1
Herbicides	(ug/kg)
2,4-D	< 38
2,4,5-TP (Silvex)	< 19
2,4,5-T	< 19

ppb.

7.3 ARSENIC

Bold was concentration of detected compound.
Italics was reporting limit for ND compound.

Bainbridge Ash

Sample I.D.	TCLP	Ash 360
Lab I.D.	Haz	9806L270
Matrix	Limit	solid
Sample Date	v	06/10/98
General Chemistry		
pH	---	
Flashpoint (deg. F)	---	> 163
Percent Solids	---	87.2
Reactive Cyanide (mg/kg)	---	*< 0.5*
Reactive Sulfide (mg/kg)	---	**24.0**
TCLP VOCs	ug/L	ug/L
Vinyl chloride	200	*< 0.050*
1,1-Dichloroethene	700	*< 0.025*
Chloroform	6000.0	*< 0.025*
1,2-Dichloroethane	7500	*< 0.025*
Methylethyl ketone	200000	*< 0.050*
Carbon Tetrachloride	500	*< 0.025*
Trichloroethene	500	*< 0.025*
Benzene	500	*< 0.025*
Tetrachloroethene	700	*< 0.025*
Chlorobenzene	100000	*< 0.025*
TCLP SVOCs	ug/L	ug/L
Pyridine	5000	*< 0.050*
1,4-Dichlorobenzene	7500	*< 0.050*
2-Methylphenol (o-Cresol)	200000	*< 0.050*
3- & 4-Methylphenol	200000 ea	*< 0.050*
(m- & p-Cresol)		*< 0.050*
Hexachloroethane	3000	*< 0.050*
Nitrobenzene	2000	*< 0.050*
Hexachlorobutadiene	500	*< 0.050*
2,4,6-Trichlorophenol	2000	*< 0.050*
2,4,5-Trichlorophenol	400000	*< 0.12*
2,4-Dinitrotoluene	130	*< 0.050*
Hexachlorobenzene	130	*< 0.050*
Pentachlorophenol	100000	*< 0.12*

Sample I.D.	TCLP	Ash 360
Lab I.D.	Haz	
Matrix	Limit	solid
Sample Date	v	06/10/98
TCLP Pesticides	ug/L	ug/L
gamma-BHC (Lindane)	400	*< 0.50*
Heptachlor	8	*< 0.50*
Heptacior Epoxide	8	*< 0.50*
Endrin	20	*< 1.0*
Methoxychlor	10000	*< 5.0*
Chlordane	30	*< 0.50*
Toxaphene	500	*< 50*
TCLP Herbicides	ug/L	ug/L
2,4-D	10000	*< 10*
2,4,5-TP (Silvex)	1000	*< 5.0*
TCLP Metals	ug/L	ug/L
Arsenic	5000	*24.1*
Barium	100000	**219**
Cadmium	1000	**6.6**
Chromium	5000	**7.8**
Lead	5000	**86.7**
Mercury	200	*0.10*
Selenium	1000	**40.6**
Silver	500	*6.6*
PCBs		
Arochlor 1016	---	*< 38*
Arochlor 1221	---	*< 76*
Arochlor 1232	---	*< 38*
Arochlor 1242	---	*< 38*
Arochlor 1248	---	*< 38*
Arochlor 1254	---	*< 38*
Arochlor 1260	---	*< 38*

Bold was concentration of detected compound.
Italics was reporting limit for ND compound.

Bainbridge Ash - Soil Below Ash

Sample Date - 10 July 1998 Sample No. Ash 361

TCL VOCs	(ug/kg)
Acetone	14
Benzene	< 11
Bromoform	< 11
Bromodichloromethane	< 11
Bromomethane	< 11
2-Butanone	< 11
Carbon Disulfide	< 11
Carbon Tetrachloride	< 11
Chlorobenzene	< 11
Chloroethane	< 11
Chloromethane	< 11
Chloroform	< 11
Dibromochloromethane	< 11
1,1-Dichloroethane	< 11
1,2-Dichloroethane	< 11
1,1-Dichloroethene	< 11
cis-1,2-Dichloroethene	< 11
trans-1,2-Dichloroethene	< 11
1,2-Dichloropropane	< 11
cis-1,3-Dichloropropene	< 11
trans-1,3-Dichloropropene	< 11
Ethylbenzene	< 11
2-Hexanone	< 11
Methylene chloride	2 J
4-Methyl-2-pentanone	< 11
Styrene	< 11
1,1,2,2-Tetrachloroethane	< 11
Tetrachloroethene	< 11
Toluene	< 11
1,1,1-Trichloroethane	< 11
1,1,2-Trichloroethane	< 11
Trichloroethene	< 11
Vinyl chloride	< 11
Xylenes (Total)	< 11

TCL SVOCs	(ug/kg)
Acenapthene	< 350
Acenaphthylene	< 350
Anthracene	< 350
Benzo(a)anthracene	< 350
Benzo(a)pyrene	< 350
Benzo(b)fluoranthene	< 350
Benzo(g,h,i)perylene	< 350
Benzo(k)fluorethene	< 350
Bis(2-chloroethoxy)methane	< 350
Bis(2-chloroethyl)ether	< 350
Bis(2-chloroisopropyl)ether	< 350
Bis(2-ethylhexyl)phthalate	< 350
4-Bromophenylphenylether	< 350
Butylbenzylphthalate	< 350
4-Chloro-3-methylphenol	< 350

TCL SVOCs	(ug/kg)
4-Chloroaniline	< 350
2-Chloronapthalene	< 350
2-Chlorophenol	< 350
4-Chlorophenylphenylether	< 350
Chrysene	< 350
Di-n-butylphthalate	< 350
Di-n-octylphthalate	< 350
Dibenz(a,h)anthracene	< 350
Dibenzofuran	< 350
1,2-Dichlorobenzene	< 350
1,3-Dichlorbenzene	< 350
1,4-Dichlorobenzene	< 350
3,3'-Dichlorobenzidine	< 2200
2,4-Dichlorophenol	< 350
Diethylphthalate	< 350
Dimethylphthalate	< 350
2,4-Dimethylphenol	< 700
4,6-Dinitro-2-methylphenol	< 350
2,4-Dinitrophenol	< 350
2,4-Dinitrotoluene	< 350
2,6-Dinitrotoluene	< 350
Fluoranthene	< 350
Fluorene	< 350
Hexachlorobenzene	< 350
Hexachlorobutadiene	< 350
Hexachlorocyclopentadiene	< 350
Hexachloroethane	< 350
Indeno(1,2,3-cd)pyrene	< 350
Isophorone	< 350
2-Methylnaphthalene	< 350
2-Methylphenol	< 710
4-Methylphenol	< 350
N-Nitroso-di-n-propylamine	< 700
N-Nitrosodiphenylamine	< 350
Naphthalene	< 430
2-Nitroaniline	< 350
3-Nitroaniline	< 380
4-Nitroaniline	< 350
Nitrobenzene	< 350
2-Nitrophenol	< 750
4-Nitrophenol	< 480
Pentachlorophenol	< 350
Phenanthrene	< 350
Phenol	< 350
Pyrene	< 350
1,2,4-Trichlorobenzene	< 540
2,4,5-Trichlorophenol	< 430
2,4,6-Trichlorophenol	< 0.54
Cyanide (mg/kg)	

TCL Pesticides/PCBs	(ug/kg)
Aldrin	< 0.892
Dieldrin	< 1.828
α–Chlordane	< 1.828
γ–Chlordane	< 0.892
Technical Chlordane	< 18.279
4,4'-DDT	< 5.376
4,4'-DDD	< 3.548
4,4'-DDE	< 1.828
Endosulfan I	< 1.828
Endosulfan II	< 3.548
Endosulfan sulfate	< 3.548
Endrin	< 3.548
Endrin aldehyde	< 3.548
Heptachlor	< 0.892
Heptachlor epoxide	< 0.892
Isodrin	< 0.892
Methoxychlor	< 8.924
Endrin ketone	< 8.924
alpha-BHC	< 0.892
beta-BHC	< 1.828
gamma-BHC (Lindane)	< 0.892
delta-BHC	< 0.892
Toxaphene	< 89.247
Arochlor 1016	< 21.505
Arochlor 1221	< 21.505
Arochlor 1232	< 21.505
Arochlor 1242	< 21.505
Arochlor 1248	< 21.505
Arochlor 1254	< 21.505
Arochlor 1260	< 21.505

TAL Metals	(mg/kg)
Aluminum	4300
Antimony	< 0.20
Arsenic	1.4
Barium	13.1
Beryllium	0.16 B
Cadmium	< 0.03
Calcium	149
Chromium	7.5
Cobalt	0.66
Copper	2.6
Iron	5700
Lead	3.9
Magnesium	182
Manganese	13.2
Mercury	< 0.05
Nickel	1.6
Potassium	81.7 B
Selenium	< 0.34
Silver	< 0.62
Sodium	113 B
Thallium	< 0.44
Vanadium	11.4
Zinc	7.0

Bold was concentration of detected compound.
Italics was reporting limit for ND compound.

Sample Date - 10 July 1998 Sample No. Ash 362

TCL VOCs	(ug/kg)
Acetone	< 12
Benzene	< 12
Bromoform	< 12
Bromodichloromethane	< 12
Bromomethane	< 12
2-Butanone	< 12
Carbon Disulfide	< 12
Carbon Tetrachloride	< 12
Chlorobenzene	< 12
Chloroethane	< 12
Chloromethane	< 12
Chloroform	< 12
Dibromochloromethane	< 12
1,1-Dichloroethane	< 12
1,2-Dichloroethane	< 12
1,1-Dichloroethene	< 12
cis-1,2-Dichloroethene	< 12
trans-1,2-Dichloroethene	< 12
1,2-Dichloropropane	< 12
cis-1,3-Dichloropropene	< 12
trans-1,3-Dichloropropene	< 12
Ethylbenzene	< 12
2-Hexanone	< 12
Methylene chloride	2 J
4-Methyl-2-pentanone	< 12
Styrene	< 12
1,1,2,2-Tetrachloroethane	< 12
Tetrachloroethene	< 12
Toluene	< 12
1,1,1-Trichloroethane	< 12
1,1,2-Trichloroethane	< 12
Trichloroethene	< 12
Vinyl chloride	< 12
Xylenes (Total)	< 12

TCL SVOCs	(ug/kg)
Acenapthene	< 400
Acenaphthylene	< 400
Anthracene	< 400
Benzo(a)anthracene	< 400
Benzo(a)pyrene	< 400
Benzo(b)fluoranthene	< 400
Benzo(g,h,i)perylene	< 400
Benzo(k)fluorethene	< 400
Bis(2-chloroethoxy)methane	< 400
Bis(2-chloroethyl)ether	< 400
Bis(2-chloroisopropyl)ether	< 400
Bis(2-ethylhexyl)phthalate	< 400
4-Bromophenylphenylether	< 400
Butylbenzylphthalate	< 400
4-Chloro-3-methylphenol	< 400

TCL SVOCs	(ug/kg)
4-Chloroaniline	< 400
2-Chloronapthalene	< 400
2-Chlorophenol	< 400
4-Chlorophenylphenylether	< 400
Chrysene	< 400
Di-n-butylphthalate	< 400
Di-n-octylphthalate	< 400
Dibenz(a,h)anthracene	< 400
Dibenzofuran	< 400
1,2-Dichlorobenzene	< 400
1,3-Dichlorbenzene	< 400
1,4-Dichlorobenzene	< 400
3,3'-Dichlorobenzidine	< 400
2,4-Dichlorophenol	< 400
Diethylphthalate	< 400
Dimethylphthalate	< 400
2,4-Dimethylphenol	< 400
4,6-Dinitro-2-methylphenol	< 790
2,4-Dinitrophenol	< 2400
2,4-Dinitrotoluene	< 400
2,6-Dinitrotoluene	< 400
Fluoranthene	< 400
Fluorene	< 400
Hexachlorobenzene	< 400
Hexachlorobutadiene	< 400
Hexachlorocyclopentadiene	< 400
Hexachloroethane	< 400
Indeno(1,2,3-cd)pyrene	< 400
Isophorone	< 400
2-Methylnaphthalene	< 400
2-Methylphenol	< 400
4-Methylphenol	< 800
N-Nitroso-di-n-propylamine	< 400
N-Nitrosodiphenylamine	< 800
Naphthalene	< 400
2-Nitroaniline	< 400
3-Nitroaniline	< 490
4-Nitroaniline	< 400
Nitrobenzene	< 400
2-Nitrophenol	< 400
4-Nitrophenol	< 850
Pentachlorophenol	< 550
Phenanthrene	< 400
Phenol	< 400
Pyrene	< 400
1,2,4-Trichlorobenzene	< 400
2,4,5-Trichlorophenol	< 610
2,4,6-Trichlorophenol	< 490
Cyanide (mg/kg)	< 0.61

TCL Pesticides/PCBs	(ug/kg)
Aldrin	< 1.012
Dieldrin	< 6.097
α-Chlordane	< 2.073
γ-Chlordane	< 1.012
Technical Chlordane	< 20.731
4,4'-DDT	< 6.097
4,4'-DDD	< 4.024
4,4'-DDE	< 2.073
Endosulfan I	< 2.073
Endosulfan II	< 4.024
Endosulfan sulfate	< 4.024
Endrin	< 4.024
Endrin aldehyde	< 4.024
Heptachlor	< 1.012
Heptachlor epoxide	< 1.012
Isodrin	< 1.012
Methoxychlor	< 10.122
Endrin ketone	< 10.122
alpha-BHC	< 1.012
beta-BHC	< 2.073
gamma-BHC (Lindane)	< 1.012
delta-BHC	< 1.012
Toxaphene	< 101.219
Arochlor 1016	< 24.390
Arochlor 1221	< 24.390
Arochlor 1232	< 24.390
Arochlor 1242	< 24.390
Arochlor 1248	< 24.390
Arochlor 1254	< 24.390
Arochlor 1260	< 24.390

TAL Metals	(mg/kg)
Aluminum	3030
Antimony	< 0.23
Arsenic	1.8
Barium	4.1
Beryllium	0.04 B
Cadmium	< 0.04
Calcium	65.5 B
Chromium	9.0
Cobalt	0.24 B
Copper	2.3
Iron	5800
Lead	5.1
Magnesium	52.3 B
Manganese	6.5
Mercury	< 0.06
Nickel	0.68
Potassium	66.7 B
Selenium	< 0.39
Silver	< 0.71
Sodium	151 B
Thallium	< 0.50
Vanadium	12.5
Zinc	3.8

Bold was concentration of detected compound.
Italics was reporting limit for ND compound.

Sample Date - 10 July 1998 Sample No. Ash 363

TCL VOCs	(ug/kg)
Acetone	< 12
Benzene	< 12
Bromoform	< 12
Bromodichloromethane	< 12
Bromomethane	< 12
2-Butanone	< 12
Carbon Disulfide	< 12
Carbon Tetrachloride	< 12
Chlorobenzene	< 12
Chloroethane	< 12
Chloromethane	< 12
Chloroform	< 12
Dibromochloromethane	< 12
1,1-Dichloroethane	< 12
1,2-Dichloroethane	< 12
1,1-Dichloroethene	< 12
cis-1,2-Dichloroethene	< 12
trans-1,2-Dichloroethene	< 12
1,2-Dichloropropane	< 12
cis-1,3-Dichloropropene	< 12
trans-1,3-Dichloropropene	< 12
Ethylbenzene	< 12
2-Hexanone	< 12
Methylene chloride	2 J
4-Methyl-2-pentanone	< 12
Styrene	< 12
1,1,2,2-Tetrachloroethane	< 12
Tetrachloroethene	< 12
Toluene	< 12
1,1,1-Trichloroethane	< 12
1,1,2-Trichloroethane	< 12
Trichloroethene	< 12
Vinyl chloride	< 12
Xylenes (Total)	< 12

TCL SVOCs	(ug/kg)
Acenapthene	< 410
Acenaphthylene	< 410
Anthracene	< 410
Benzo(a)anthracene	< 410
Benzo(a)pyrene	< 410
Benzo(b)fluoranthene	< 410
Benzo(g,h,i)perylene	< 410
Benzo(k)fluorethene	< 410
Bis(2-chloroethoxy)methane	< 410
Bis(2-chloroethyl)ether	< 410
Bis(2-chloroisopropyl)ether	< 410
Bis(2-ethylhexyl)phthalate	< 410
4-Bromophenylphenylether	< 410
Butylbenzylphthalate	< 410
4-Chloro-3-methylphenol	< 410
4-Chloroaniline	< 410
2-Chloronapthalene	< 410
2-Chlorophenol	< 410
4-Chlorophenylphenylether	< 410
Chrysene	< 410
Di-n-butylphthalate	< 410
Di-n-octylphthalate	< 410
Dibenz(a,h)anthracene	< 410
Dibenzofuran	< 410
1,2-Dichlorobenzene	< 410
1,3-Dichlorbenzene	< 410
1,4-Dichlorobenzene	< 410
3,3'-Dichlorobenzidine	< 410
2,4-Dichlorophenol	< 410
Diethylphthalate	< 410
Dimethylphthalate	< 410
2,4-Dimethylphenol	< 410
4,6-Dinitro-2-methylphenol	< 810
2,4-Dinitrophenol	< 2500
2,4-Dinitrotoluene	< 410
2,6-Dinitrotoluene	< 410
Fluoranthene	< 410
Fluorene	< 410
Hexachlorobenzene	< 410
Hexachlorobutadiene	< 410
Hexachlorocyclopentadiene	< 410
Hexachloroethane	< 410
Indeno(1,2,3-cd)pyrene	< 410
Isophorone	< 410
2-Methylnaphthalene	< 410
2-Methylphenol	< 410
4-Methylphenol	< 820
N-Nitroso-di-n-propylamine	< 410
N-Nitrosodiphenylamine	< 820
Naphthalene	< 410
2-Nitroaniline	< 410
3-Nitroaniline	< 500
4-Nitroaniline	< 410
Nitrobenzene	< 410
2-Nitrophenol	< 410
4-Nitrophenol	< 880
Pentachlorophenol	< 560
Phenanthrene	< 410
Phenol	< 410
Pyrene	< 410
1,2,4-Trichlorobenzene	< 410
2,4,5-Trichloorphenol	< 620
2,4,6-Trichlorophenol	< 500
Cyanide (mg/kg)	< 0.63

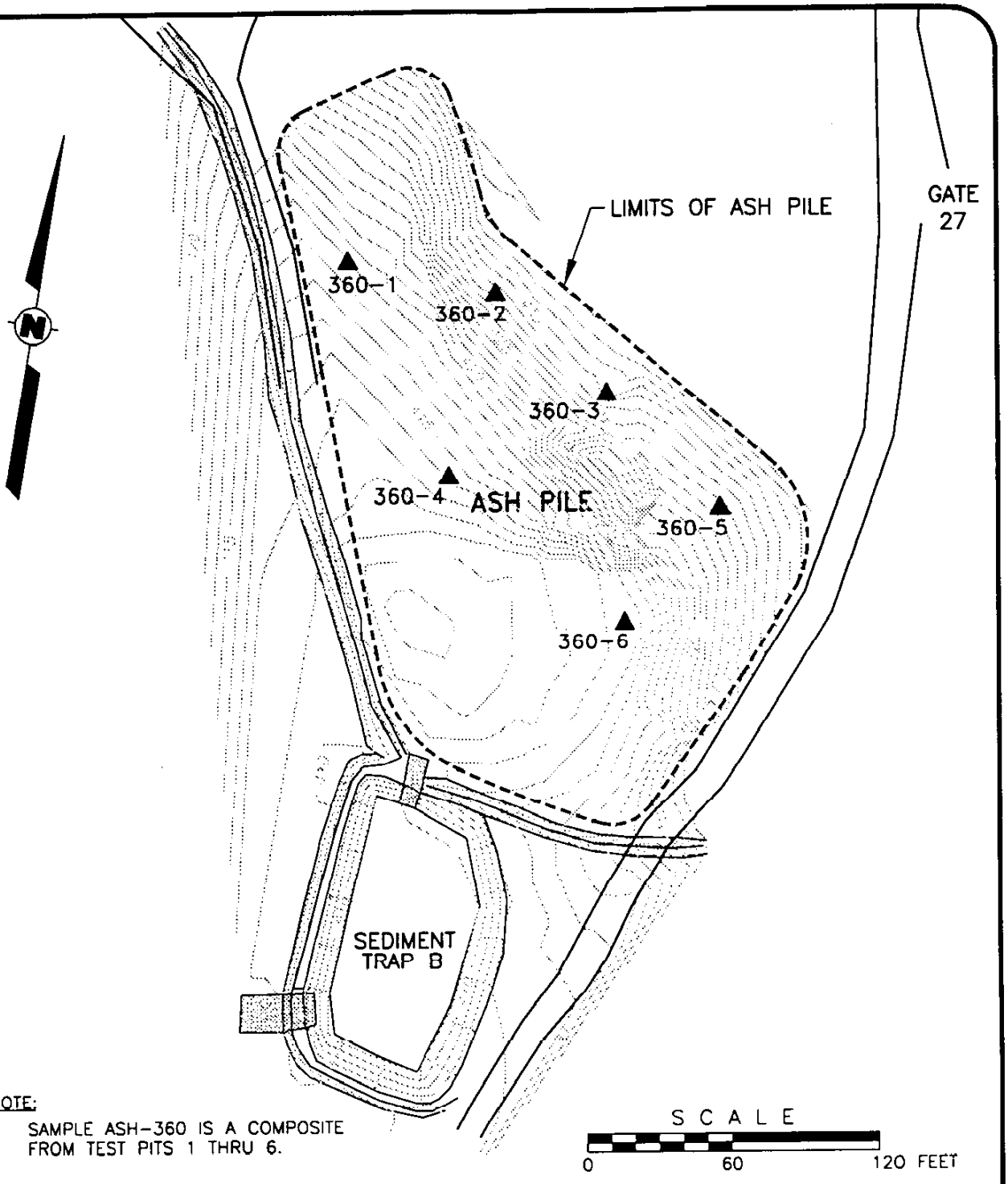
TCL Pesticides/PCBs	(ug/kg)
Aldrin	< 1.037
Dieldrin	< 2.125
α–Chlordane	< 1.037
γ–Chlordane	< 2.125
Technical Chlordane	< 21.250
4,4'-DDT	< 6.250
4,4'-DDD	< 4.125
4,4'-DDE	< 2.125
Endosulfan I	< 2.125
Endosulfan II	< 4.125
Endosulfan sulfate	< 4.125
Endrin	< 4.125
Endrin aldehyde	< 4.125
Heptachlor	< 1.037
Heptachlor epoxide	< 1.037
Isodrin	< 1.037
Methoxychlor	< 10.375
Endrin ketone	< 10.375
alpha-BHC	< 1.037
beta-BHC	< 2.125
gamma-BHC (Lindane)	< 1.037
delta-BHC	< 1.037
Toxaphene	< 103.750
Arochlor 1016	< 25
Arochlor 1221	< 25
Arochlor 1232	< 25
Arochlor 1242	< 25
Arochlor 1248	< 25
Arochlor 1254	< 25
Arochlor 1260	< 25

TAL Metals	(mg/kg)
Aluminum	5720
Antimony	< 0.24
Arsenic	0.50 B
Barium	24.3
Beryllium	0.44 B
Cadmium	< 0.04
Calcium	102 B
Chromium	6.0
Cobalt	4.9
Copper	2.9
Iron	6350
Lead	4.0
Magnesium	240
Manganese	35.4
Mercury	< 0.06
Nickel	3.2
Potassium	172
Selenium	< 0.40
Silver	< 0.73
Sodium	129 B
Thallium	< 0.51
Vanadium	8.7
Zinc	9.7

Bold was concentration of detected compound.
Italics was reporting limit for ND compound.

FIGURES

LOCATION OF INVESTIGATIVE ASH SAMPLES



NOTE:

SAMPLE ASH-360 IS A COMPOSITE FROM TEST PITS 1 THRU 6.

SCALE

0 60 120 FEET

LEGEND:

▲ TEST PIT LOCATION FOR COMPOSITE SAMPLE IN ASH.

OHM Remediation Services Corp.

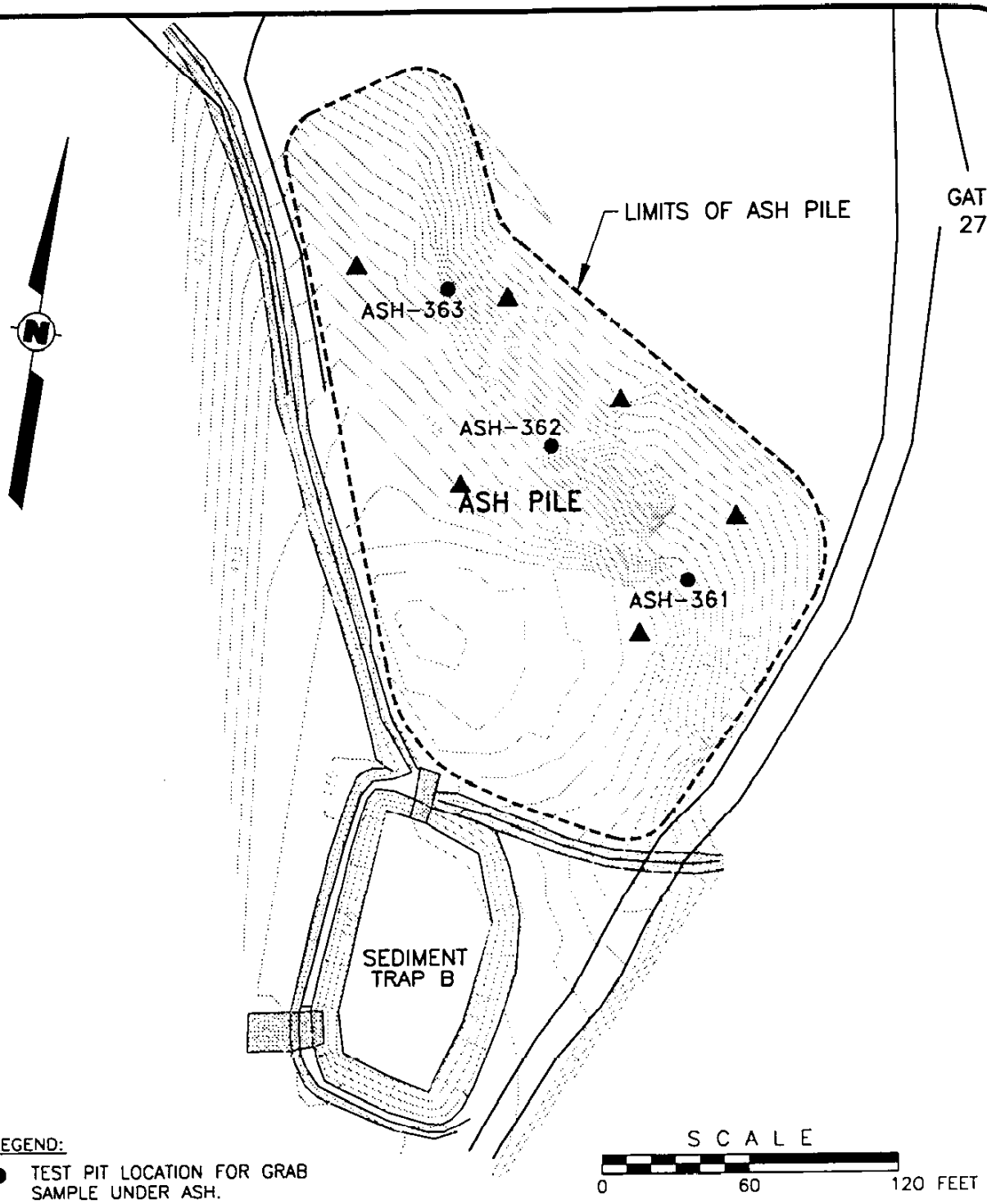
OHM Project No. 19568

Designed By	B.R.Harris	1/29/99	Scale: AS SHOWN	Drawing No. 19568-A33
Drawn By	B.B.O'Connor	1/29/99		
Checked By	D.W.Pringle	1/29/99	Sheet No.	Rev. 0
Approved By				

FIGURE A
LOCATION OF INVESTIGATIVE ASH SAMPLE ASH-360
GATE 27 ASH PILE AREA
NAVAL TRAINING CENTER - BAINBRIDGE
PORT DEPOSIT, MARYLAND
PREPARED FOR
DEPARTMENT OF THE NAVY
EFA - CHESAPEAKE
WASHINGTON, D.C.

CAD : 19568-A36

Plot Scale: 1 = 60 revision 0



CAD File: 19568-A35

Plot Scale: 1 = 60 revision 0

OHM Remediation Services Corp.
OHM Project No. 19568

Designed By	B.R.Harris	1/29/99	Scale: AS SHOWN	Drawing No. 19568-A35
Drawn By	B.B.O'connor	1/29/99		
Checked By	O.W.Pringle	1/29/99	Sheet No.	Rev. 0
Approved By				

FIGURE B
LOCATION OF INVESTIGATIVE ASH SAMPLES
ASH-361, ASH-362 & ASH-363
GATE 27 ASH PILE AREA
NAVAL TRAINING CENTER - BAINBRIDGE
PORT DEPOSIT, MARYLAND
PREPARED FOR
DEPARTMENT OF THE NAVY
EFA - CHESAPEAKE
WASHINGTON, D.C.